

POSTPARTUM GLUCOSE TOLERANCE IN EARLY ONSET GESTATIONAL DIABETES

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Background and Purpose. The prognosis implication of early onset gestational diabetes mellitus (EGDM) is unknown. The aim of this study is to compare postpartum glucose tolerance (GT) between women with GDM and standard GDM.

Methods. This is a retrospective study conducted between 1/1/2013 and 1/5/2015, including women with EGDM (diagnosed before 20 weeks' gestation) and women with GDM diagnosed between 24 and 32 weeks' gestation (SGDM). Women with delivery before 22 weeks' gestation or in another center, multiple pregnancy, previous pregnancy included in the study and abnormal GT known before pregnancy are excluded. The outcome is the incidence of abnormal GT 6 to 8 weeks after delivery, diagnosed on a 75g OGTT or on glucose fasting levels. Statistical analyses include the X² test and logistic regression (2-sided, p<0.05).

Results. Postpartum GT status is available in 70% of the 171 women with EGDM and 549 women with SGDM included in the study. An abnormal GT status is observed more frequently in women with EGDM (27% vs. 17%), before and after adjustment for age > 35 years, obesity, PCOS, chronic hypertension and medical disorders (aOR 2.0, 95% CI 1.5-3.9; p = 0.006). Among women with EGDM, 5.4% have diabetes in contrast to 1.8% in women with SGDM. Predictors of abnormal postpartum GT are the timing of the diagnosis (EGDM vs. SGDM), insulin therapy and prematurity.

Conclusions. A more intensive management and follow-up should be considered in women with EGDM since their risk of abnormal GT outside pregnancy is higher than in SGDM.

Title: Use of Blood Products in Peripartum Critical Illness

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Background:

Pregnant women admitted to ICU with transfusion of ≥ 4 units of packed red blood cells (PRBCs) have been associated with poor outcomes. The objective of this study was to evaluate clinical outcomes associated with administration of any blood products in critically ill peripartum patients.

Methods:

A retrospective cohort study using the Project IMPACT(10/2002-6/2010) database and EPIC chart review(7/2010-12/2015) to identify pregnant or ≤ 30 day postpartum(peripartum) patients with an ICU admission. Demographic, blood products (PRBC, platelets, fresh frozen plasma), procedures and outcomes were collected. Statistics are represented as percentages with chi-square testing as appropriate.

Results:

225 patients were analyzed with 31% receiving blood products. Patients were divided into two groups: those receiving blood products(n=70) and those that did not(n=155). No difference was noted for age or race; however hematocrit was significantly different: mean 28.34(+/-6.89) vs 31.10(+/-5.48), respectively(p=0.002). Need for mechanical ventilation(MV) and days on MV were statistically different, 75.4% vs 45.9%(p=0.00), respectively; MV days 4.6(IQR 0.35-13.3) vs. 0.9(IQR 0-1.7), respectively,(p=<0.001). Hospital length of stay(LOS) was significantly longer in patients receiving blood products 16(IQR 6-30.25) days vs 6(IQR 4-10.5)days,(p<0.001). ICU LOS was greater in patients receiving blood products 5.6(IQR 2-13) days vs 2(1.85-3.73) days,(p=<0.001). Mortality was 11.4% for patients receiving blood products vs 1.9% without,(p=0.002).

Conclusions:

Peripartum patients receiving blood products were more likely to require respiratory support and experience poor outcomes with an almost 6 fold increase in mortality. Although transfusion would be expected to be associated with greater severity of illness, the possibility of adverse consequences of transfusions cannot be excluded.

Childhood maltreatment is associated with increased cytokine production among pregnant women with gestational diabetes mellitus

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Background and Purpose: Pregnant women with histories of childhood maltreatment are at increased risk for adverse maternal and neonatal outcomes including preterm birth. Mechanisms explaining the association between child maltreatment history and adverse outcomes are poorly understood. In this study we tested the hypothesis that women with maltreatment histories are at increased risk for adverse pregnancy outcomes due to dysregulation in biological systems involved in parturition and important for healthy pregnancy development.

Methods: Participants were 24 pregnant women enrolled in a study examining gestational diabetes mellitus (GDM) and obstructive sleep apnea (OSA). As part of the larger study, women completed the Adverse Childhood Experiences measure to assess history of childhood maltreatment in the first 18 years of life. At approximately 30 weeks' gestation (SD=3, range= 24-36), maternal plasma was collected to measure markers of inflammation. Maternal saliva was collected at three times across the day to measure diurnal cortisol production.

Results: Women were, on average 31 years old (SD=4), 54% of women were non-Hispanic White. Seventeen percent of the sample (N=4) reported a history of childhood sexual or physical abuse (considered the most severe types of maltreatment). Women with maltreatment histories displayed significantly elevated cytokines (IL-15, IL-2, and IL-6), lower diurnal cortisol production (although not statistically significant), and a greater incidence of preterm birth in a prior pregnancy.

Conclusions: Pregnant women with childhood maltreatment histories may be predisposed to dysregulation in biological systems that are important to the health of their pregnancies.

Maternal Eclampsia and Long Term Seizures (MELTS) Study

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ABSTRACT

Background and Purpose: It is unknown if women with eclampsia are at higher long-term risk of a seizure disorder (SzD). The objective of MELTS was to determine the incidence rate and relative risk of SzD following eclampsia

Methods: We evaluated 1,565,733 births in a retrospective cohort study in Ontario, Canada. The risk of SzD was evaluated starting 30 days after a hospital birth discharge date. Risk was expressed as an incidence rate, and a hazard ratio (HR) with 95% confidence interval (CI), comparing a pregnancy affected by (a) eclampsia, (b) preeclampsia or (c) gestational hypertension, to an unaffected pregnancy (referent).

Results: There were 1615 (0.10%) pregnancies affected by eclampsia, 17,264 (1.1%) with preeclampsia, 60,863 (3.9%) with gestational hypertension and 1,485,991 (94.9%) were normotensive. A future SzD was significantly more likely after a pregnancy with prior eclampsia (4.58 per 10,000 person-years) than a pregnancy without a hypertensive disorder of pregnancy (0.72 per 10,000 person-years) [HR of 6.09 (95% CI 2.73-13.60)]. This was minimally attenuated in a multivariable model (adjusted HR 5.51, 95% CI 2.46-12.31). The risk of SzD was doubled in pregnancies affected by preeclampsia (adjusted HR 1.96, 95% CI 1.21-3.17), but not gestational hypertension (adjusted HR 1.02, 95% CI 0.72-1.44).

Conclusions: Women with eclampsia should be reassured that, while their long-term relative risk of a SzD is high, the absolute risk is extremely low. Provided there are no persistent neurological findings at discharge, no special neurological testing or treatment is recommended, nor should women be reported to driver licensing bodies.

Acute Kidney Injury and Future Hypertensive Disorders of Pregnancy – a matched cohort study.

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Importance: Acute kidney injury (AKI) has recently been identified as a risk factor for future hypertension. The effect of an episode of AKI on future hypertensive disorders of pregnancy (HDP), however, is unknown. We sought to assess whether a previous episode of AKI with subsequent recovery of renal function is associated with the development of HDP.

Methods: We conducted a matched cohort study of pregnant women at the Massachusetts General Hospital between 1998 to 2008. Women with a history of recovered acute kidney injury without hypertension prior to conception (r-AKI, n=102) were match 1:2 on age, race, BMI, diabetes status and first-trimester diastolic blood pressure to women without prior kidney injury or hypertension. Conditional logistic regression was used to compare odds of adverse pregnancy outcomes between groups.

Results: Women with r-AKI had 4-fold increased odds of preeclampsia (OR 4.2; 95%CI 1.9-9.3). Women with r-AKI also had increased odds of delivery by cesarean section and preterm delivery (OR 1.7, 95%CI 1.1-2.9 and OR 2.9, 95%CI 1.3-6.4, respectively). The offspring of mothers with r-AKI had 2-fold greater odds of composite adverse outcomes, including NICU admission, intrauterine growth restriction and perinatal death (OR 2.2, 95%CI 1.3-3.9).

Conclusion: Despite normal renal function and blood pressure prior to pregnancy, an episode of AKI is an independent risk factor for hypertensive disorders of pregnancy and adverse fetal outcomes even when matching for major comorbidities of high-risk pregnancies. This describes a new group of women at risk for complicated pregnancies.